ABSTRACT

A vessel includes a hull having a cavitator and a main body extending aft from the cavitator, with the main body comprising an external surface. A ballast tank is disposed in the hull. An air-breathing engine is coupled to the hull. A fluid supply system includes a rotor, one or more fluid conduits, and one or more fluid outlets. The rotor is configured to route air from an external environment through the fluid conduits and discharge it through the fluid outlets, which are routed through an aerodynamic structure. The vessel is operable in a supercavitation mode, during which the fluid supply system forms a supercavitation flow pattern along the external surface of the main body.